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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,609	07/30/2003	Shouji Katsumata	115922	6115

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EXAMINER	
CHANG, CHING	
ART UNIT	**PAPER NUMBER**
3748	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/629,609	KATSUMATA, SHOUJI	
	Examiner	Art Unit	
	Ching Chang	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5 and 11-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5, and 11-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/16/2005 has been entered.

Claims 2-3, and 6-10 are cancelled, and new claims 14-16 are added as requested.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. ***Claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.***

More specifically, " the lubricating oil passage " before " to the cam driven valve " in claims 11-13 lacks antecedent basis, and renders the claimed subject matter indefinite.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. ***Claims 1, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello (US Patent 6,138,621) in view of Nakamura et al. (US Patent 5,220,891).***

Albanello discloses an internal combustion engine (See Fig. 1), comprising: a head section (1) that includes an electromagnetically driven valve (20) and a cam (28) driven valve; a block section (under 3) that includes a piston (under 2) and a crankshaft connected thereto; the electromagnetically driven valve that serves to drive one of an intake valve (7) and an exhaust valve (27); and a cam (28) driven valve that serves to drive the other valve; a first lubricating oil passage (23, 26) being formed to the electromagnetically driven valve.

Albanello discloses the invention as recited above, however, fails to disclose a second lubricating oil passage being formed independently from the first lubricating oil passage, and being formed to the cam driven valve and the block section.

The patent to Nakamura on the other hand, teaches that it is conventional in the variable cam engine art, to utilize a separate lubricating oil passage (through 15, 16, 13) being formed to the cam driven valve and the block section.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the independently formed lubricating oil passage to the cam driven valve and the block section as taught by Nakamura in the Albanello device, since the use thereof would provide a more flexible engine valve train lubrication system.

5. ***Claims 4-5, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello in view of Nakamura (as applied to claims 1, and 11 above), and further in view of Hu (US Patent No. 5,680,841).***

The modified Albanewllo device discloses the invention, however, fails to disclose the lubricating oil supplied through the first lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the second lubricating oil passage.

The patent to Hu on the other hand, teaches that it is conventional in the art of an engine with combined cam and electro-hydraulic engine valve control, to utilize a lubricating oil supplied through the lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the other lubricating oil passage (See Col. 3, line 18 through Col. 4, line 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the different type lubricating oil (in viscosity) supplied to the electromagnetically driven valve from that being supplied to other engine components as taught by Hu in the modified Albanello device, since the use thereof

would provide an alternative choice on lubricating oil for each cam driven or electromagnetically driven engine valve, with respect to engine operating conditions.

6. ***Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello (US Patent 6,138,621) in view of Kobayashi et al. (US Patent 6,302,071).***

Albanello discloses an internal combustion engine (See Fig. 1), comprising: a head section (1); a block section (under 3) that includes a piston (under 2) and a crankshaft connected thereto; an electromagnetically driven valve (20) driving one of an intake valve (7) and an exhaust valve (27), the electromagnetically driven valve formed in the head section; and a cam (28) driven valve formed in the head section and driving the other valve; a first lubricating oil passage (23, 26) being formed to the electromagnetically driven valve.

Albanello discloses the invention as recited above, however, fails to disclose the first lubricating oil passage being formed to the electromagnetically driven valve and the cam driven valve, and a second lubricating oil passage being formed to the block section including the piston and crankshaft.

The patent to Kobayashi on the other hand, teaches that it is conventional in the art of an oil passage system of valve moving apparatus, to utilize a first lubricating oil passage (74) to an electromagnetically driven valve and a cam driven valve, and a second lubricating oil passage (73) being formed to the block section including the piston and crankshaft.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the first lubricating oil passage and the second lubricating oil passage as taught by Kobbayashi in the Albanello device, since the use thereof would provide a more compact engine valve lubrication system.

7. ***Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello in view of Kobayashi (as applied to claim 14 above), and further in view of Hu (US Patent No. 5,680,841).***

The modified Albanewllo device discloses the invention, however, fails to disclose the lubricating oil supplied through the first lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the second lubricating oil passage.

The patent to Hu on the other hand, teaches that it is conventional in the art of an engine with combined cam and electro-hydraulic engine valve control, to utilize a lubricating oil supplied through the lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the other lubricating oil passage (See Col. 3, line 18 through Col. 4, line 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the different type lubricating oil (in viscosity) supplied to the electromagnetically driven valve from that being supplied to other engine components as taught by Hu in the modified Albanello device, since the use thereof

would provide an alternative choice on lubricating oil for an electromagnetically driven engine valve or other engine components, with respect to engine operating conditions.

8. ***Claims 1, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello (US Patent 6,138,621) in view of Tabata et al. (US Patent 5,400,747).***

Albanello discloses an internal combustion engine (See Fig. 1), comprising: a head section (1) that includes an electromagnetically driven valve (20) and a cam (28) driven valve; a block section (under 3) that includes a piston (under 2) and a crankshaft connected thereto; the electromagnetically driven valve that serves to drive one of an intake valve (7) and an exhaust valve (27); and a cam (28) driven valve that serves to drive the other valve; a first lubricating oil passage (23, 26) being formed to the electromagnetically driven valve.

Albanello discloses the invention as recited above, however, fails to disclose a second lubricating oil passage being formed independently from the first lubricating oil passage, and being formed to the cam driven valve and the block section.

The patent to Tabata on the other hand, teaches that it is conventional in the valve timing control art, to utilize a second lubricating oil passage to the block section (See Fig. 2, between piston and cylinder), the second lubricating oil passage being formed independently from a first lubricating oil passage (for 50) to the electromagnetically driven valve (53, 56, 57).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the independently formed second lubricating oil

passage to the cam driven valve and the block section as taught by Tabata in the Albanello device, since the use thereof would provide a more flexible engine valve train lubrication system.

9. ***Claims 4-5, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albanello in view of Nakamura (as applied to claims 1, and 11 above), and further in view of Hu (US Patent No. 5,680,841).***

The modified Albanewllo device discloses the invention, however, fails to disclose the lubricating oil supplied through the first lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the second lubricating oil passage.

The patent to Hu on the other hand, teaches that it is conventional in the art of an engine with combined cam and electro-hydraulic engine valve control, to utilize a lubricating oil supplied through the lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the other lubricating oil passage (See Col. 3, line 18 through Col. 4, line 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the different type lubricating oil (in viscosity) supplied to the electromagnetically driven valve from that being supplied to other engine components as taught by Hu in the modified Albanello device, since the use thereof would provide an alternative choice on lubricating oil for each cam driven or electromagnetically driven engine valve, with respect to engine operating conditions.

Response to Arguments

10. Applicant's arguments with respect to claims 1, 4-5, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (571)272-4857. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Ching Chang

THOMAS DENION
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